

Hindu cosmology

Hindu cosmology is the description of the universe and its states of matter, cycles within time, physical structure, and effects on living entities according to Hindu texts.

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Matter

All matter is based on three inert *gunas* (qualities or tendencies):^{[1][2][3]}

- sattva (goodness)
- rajas (passion)
- tamas (darkness)

There are three states of the *gunas* that make up all matter in the universe:^{[1][3][4][5][6][7]}

- pradhana (root matter): *gunas* in an unmixed and unmanifested state (equilibrium).
- prakriti (primal matter): *gunas* in a mixed and unmanifested state (agitated).
- mahat-tattva (matter or universal womb): *gunas* in a mixed and manifested state.

Pradhana, which has no consciousness or will to act on its own, is initially agitated by a primal desire to create. The different schools of thought differ in understanding about the ultimate source of that desire and what the *gunas* are mixed with (eternal elements, time, *jiva-atmas*).^{[8][9]}

The manifest material elements (matter) range from the most subtle to the most physical (gross). These material elements cover the individual, spiritual *jiva-atmas* (embodied souls), allowing them to interact with the material sense objects, such as their temporary material bodies, other conscious bodies, and unconscious objects.

Manifested subtle elements:^{[10][11][12][a]}

- ahamkara (ego)
- buddhi (intelligence)
- citta (mind)

Manifested physical (gross) elements (a.k.a. pancha bhoota or 5 great elements) and their associated senses and sense organs that manifest:^{[13][14][15][a]}

- space/ether > sound > ear
- air > smell > nose
- fire > sight/form > eye
- water > taste > tongue
- earth > touch > skin

Time

Time is infinite with a cyclic universe, where the current universe was preceded and will be followed by an infinite number of universes.^{[16][17]} The different states of matter are guided by eternal *kala* (time), which repeats general events ranging from a moment to the lifespan of the universe, which is cyclically created and destroyed.^[18]

The earliest mentions of cosmic cycles in Sanskrit literature are found in the Yuga Purana (c. 1st century BCE), the Mahabharata (c. 3rd century BCE – 4th century CE), and the Manusmriti (c. 2nd – 3rd centuries CE). In the Mahabharata, there are inconsistent names applied to the cycle of creation and destruction, a name theorized as still being formulated, where *yuga* (generally, an age of time)^{[19][20]} and *kalpa* (a day of Brahma) are used, or a day of the Brahma, the creator god, or simply referred to as the process of creation and destruction, with *kalpa* and day of Brahma becoming more prominent in later writings.^[21]

Prakriti (primal matter) remains mixed for a *maha-kalpa* (life of Brahma) of 311.04 trillion years, and is followed by a *maha-pralaya* (great dissolution) of equal length. The universe (matter) remains manifested for a *kalpa* (day of Brahma) of 4.32 billion years, where the universe is created at the start and destroyed at the end, only to be recreated at the start of the next *kalpa*. A *kalpa* is followed by a *pralaya* (partial dissolution, a.k.a. night of Brahma) of equal length, when Brahma and the universe are in an unmanifested state. Each *kalpa* has 15 *manvantara-sandhyas* (junctures of great flooding) and 14 *manvantaras* (age of Manu, progenitor of mankind), with each *manvantara* lasting for 306.72 million years. Each *kalpa* has

1,000 and each *manvantara* has 71 *chatur-yugas* (epoch, a.k.a. *maha-yuga*), with each *chatur-yuga* lasting for 4.32 million years and divided into four *yugas* (*dharmic* ages): *Satya Yuga* (1,728,000 years), *Treta Yuga* (1,296,000 years), *Dvapara Yuga* (864,000 years), and *Kali Yuga* (432,000 years), of which we are currently in *Kali Yuga*.^{[22][23][24][25][26][27][28][29]}

Life

The individual, spiritual *jiva-atma* (embodied soul) is the life force or consciousness within a living entity. The *jivas* are not created, and are distinctly different from the created unconscious matter. The *gunas* in their manifest state of matter, cover the *jivas* in various ways based on each *jiva's karma* and impressions. This material covering of matter allows the *jivas* to interact with the material sense objects that make up the material universe, such as their temporary material bodies, other conscious bodies, and unconscious objects.^{[30][31][32]}

The material creation is called *maya* ("that which is not") due to its impermanent (non-eternal), temporary nature of sometimes being manifest and sometimes not. It has been compared to a dream or virtual reality, where the viewer (*jiva*) has real experiences with objects that will eventually become unreal.^{[33][34]}

Through these interactions, a *jiva* starts to identify the temporary material body as the true self, and in this way becomes influenced and bound by *maya* perpetually in a conscious state of *nescience* (ignorance, unawareness, forgetfulness). This conscious state of *nescience* leads to *samsara* (cycle of reincarnation), only to end for a *jiva* when *moksha* (liberation) is achieved through *self-realization* (*atman-jnana*) or remembrance of one's true spiritual self/nature.^{[35][36][37][38][39]}

The different schools of thought differ in understanding about the initial event that led to the *jivas* entering the material creation and the ultimate state of *moksha*.

Creation and structure

Hinduism is a conglomeration/group of distinct intellectual or philosophical points of view, rather than a rigid common set of beliefs.^[40] It includes a range of viewpoints about the origin of life. There is no single story of creation, due to dynamic diversity of Hinduism, and these are derived from various sources like Vedas, some from the Brahmanas, some from Puranas; some are philosophical, based on concepts, and others are narratives.^[41] Hindu texts do not provide a single canonical account of the creation; they mention a range of theories of the creation of the world, some of which are apparently contradictory.^[42]

Rigveda

According to Henry White Wallis, the *Rigveda* and other Vedic texts are full of alternative cosmological theories and curiosity questions. To its numerous open-ended questions, the Vedic texts present a diversity of thought, in verses imbued with symbols and allegory, where in some cases, forces and agencies are clothed with a distinct personality, while in other cases as nature with or without anthropomorphic activity such as forms of mythical sacrifices.^[43]

Hiranyagarbha sukta (golden egg)

Rigveda 10.121 mentions the Hiranyagarbha ("hiranya = golden or radiant" and "garbha = filled / womb") that existed before the creation, as the source of the creation of the Universe, similar to the world egg motif found in the creation myths of many other civilizations.^[44] It states a golden child was born in the universe

and was the lord, established earth and heaven, then asks but who is the god to whom we shall offer the sacrificial prayers?^[45]

This metaphor has been interpreted differently by the various later texts. The Samkhya texts state that Purusha and the Prakriti made the embryo, from which the world emerged. In another tradition, the creator god Brahma emerged from the egg and created the world, while in yet another tradition the Brahma himself is the Hiranyagarbha.^[46] The nature of the Purusha, the creation of the gods and other details of the embryo creation myth have been described variously by the later Hindu texts.

Purusha Sukta

The Purusha Sukta (RV 10.90) describes a myth of proto-Indo-European origin, in which the creation arises out of the dismemberment of the Purusha, a primeval cosmic being who is sacrificed by the gods.^{[44][47]} Purusha is described as all that has ever existed and will ever exist.^[48] This being's body was the origin of four different kinds of people: the Brahmin, the Rajanya, the Vaishya, and the Shudra.^[49] Viraj, variously interpreted as the mundane egg^[47] (see Hiranyagarbha) or the twofold male-female energy, was born from Purusha, and the Purusha was born again from Viraj. The gods then performed a yajna with the Purusha, leading to the creation of the other things in the manifested world from his various body parts and his mind. These things included the animals, the Vedas, the Varnas, the celestial bodies, the air, the sky, the heavens, the earth, the directions, and the Gods Indra and Agni.

The later texts such as the Puranas identify the Purusha with God. In many Puranic notes, Brahma is the creator god.^{[50]:103,318} However, some Puranas also identify Vishnu, Shiva or Devi as the creator.^{[50]:103}

Nasadiya Sukta

The Nasadiya Sukta (RV 10.129) takes a near-agnostic stand on the creation of the primordial beings (such as the gods who performed the sacrifice of the Purusha), stating that the gods came into being after the world's creation, and nobody knows when the world first came into being.^[51] It asks who created the universe, does anyone really know, and whether it can ever be known.^[52] The Nasadiya Sukta states:^{[53][54]}

Darkness there was at first, by darkness hidden;
Without distinctive marks, this all was water;
That which, becoming, by the void was covered;
That One by force of heat came into being;

Who really knows? Who will here proclaim it?
Whence was it produced? Whence is this creation?
Gods came afterwards, with the creation of this universe.
Who then knows whence it has arisen?

Whether God's will created it, or whether He was mute;
Perhaps it formed itself, or perhaps it did not;
Only He who is its overseer in highest heaven knows,
Only He knows, or perhaps He does not know.

— Rigveda 10:129–6^{[55][56][57]}

Other hymns

The early hymns of Rigveda also mention Tvastar as the first born creator of the human world.^[58]

The Devi sukta (RV 10.125) states a goddess is all, the creator, the created universe, the feeder and the lover of the universe;^[59]

Recounting the creation of gods, the Rig Veda does seem to affirm “creatio ex nihilo”.^[60] Rig Veda 10.72 states:^[54] RV 10.72 states:

1. Now amid acclaim we will proclaim the births of the gods,
so that one in a later generation will see (them) as the hymns are recited.
- 2 The Lord of the Sacred Formulation [=Bṛhaspati] smelted these (births) like a smith
In the ancient generation of the gods, what exists was born from what does not exist.
- 3 In the first generation of the gods, what exists was born from what does not exist.
The regions of space were born following that (which exists)—that(which exists) was born
from the one whose feet were opened up.

— Bṛhaspati Āṅgīrasa, Bṛhaspati Laukya, or Aditi Dākṣāyaṇī, The Gods, Rig Veda
10.72.1-3^[b]

RV 1.24 asks, "these stars, which are set on high, and appear at night, whither do they go in the daytime?"
RV 10.88 wonders, "how many fires are there, how many suns, how many dawns, how many waters? I am
not posing an awkward question for you fathers; I ask you, poets, only to find out?"^{[61][62]}

Brahmanas

The Shatapatha Brahmana mentions a story of creation, in which the Prajapati performs tapas to reproduce himself. He releases the waters and enters them in the form of an egg that evolves into the cosmos.^[63] The Prajapati emerged from the golden egg, and created the earth, the middle regions and the sky. With further tapas, he created the devas. He also created the asuras, and the darkness came into the being.^{[50]:102–103} It also contains a story similar to the other great flood stories. After the great flood, Manu the only surviving human, offers a sacrifice from which Ida is born. From her, the existing human race comes into the being.^{[50]:102–103}

The Shatapatha Brahmana states that the current human generation descends from Manu, the only man who survived a great deluge after being warned by the God. This legend is comparable to the other flood legends, such as the story of the Noah's Ark mentioned in the Bible and the Quran.^[64]



The fish avatara of Vishnu saves Manu, the progenitor of the existing human race, during the great deluge.

Upanishads

The Aitareya Upanishad (3.4.1) mentions that only the "Atman" (the Self) existed in the beginning. The Self created the heaven (Ambhas), the sky (Marikis), the earth (Mara) and the underworld (Ap). He then formed the Purusha from the water. He also created the speech, the fire, the prana (breath of life), the air and the various senses, the directions, the trees, the mind, the moon and other things.^[65]

The Brihadaranyaka Upanishad (1.4) mentions that in the beginning, only the Atman existed as the Purusha. Feeling lonely, the Purusha divided itself into two parts: male ("pati") and female ("patni"). The men were born when the male embraced the female. The female thought "how can he embrace me, after having produced me from himself? I shall hide myself." She then became a cow to hide herself, but the male became a bull and embraced her. Thus the cows were born. Similarly, everything that exists in pairs, was created. Next, the Purusha created the fire, the soma and the immortal gods (the devas) from his better part. He also created the various powers of the gods, the different classes, the dharma (law or duty) and so on.^[66] The Taittiriya Upanishad states that the being (sat) was created from the non-being. The Being later became the Atman (2.7.1), and then created the worlds (1.1.1).^{[50]:103} The Chhandogya states that the Brahma creates, sustains and destroys the world.^[67]

Puranas



An attempt to depict the creative activities of Prajapati; a steel engraving from the 1850s

The Puranas genre of Indian literature, found in Hinduism and Jainism, contain a section on cosmology and cosmogony as a requirement. There are dozens of different Mahapuranas and Upapuranas, each with its own theory integrated into a proposed human history consisting of solar and lunar dynasties. Some are similar to Indo-European creation myths, while others are novel. One cosmology, shared by Hindu, Buddhist and Jain texts involves Mount Meru, with stars and sun moving around it using Dhruva (North Star) as the focal reference.^{[68][69]} According to Annette Wilke and Oliver Moebus, the diversity of

cosmology theories in Hinduism may reflect its tendency to not reject new ideas and empirical observations as they became available, but to adapt and integrate them creatively.^[70]

In the later Puranic texts, the creator god Brahma is described as performing the act of 'creation', or more specifically of 'propagating life within the universe'. Some texts consider him equivalent to the Hiranyagarbha or the Purusha, while others state that he arose out of these. Brahma is a part of the trimurti of gods that also includes Vishnu and Shiva, who are responsible for 'preservation' and 'destruction' (of the universe) respectively.

In Garuda Purana, there was nothing in the universe except Brahman. The universe became an expanse of water, and in that Vishnu was born in the golden egg. He created Brahma with four faces. Brahma then created the devas, asuras, pitris and manushas. He also created the rakshasas, yakshas, and gandharvas. Other creatures came from the various parts of his body (e.g. snakes from his hair, sheep from his chest, goats from his mouth, cows from his stomach, others from his feet). His body hair became herbs. The four varnas came from his body parts and the four Vedas from his mouths. He created several sons from his mind: Daksha, Daksha's wife, Manu Svayambhuva, his wife Shatarupta and the rishi Kashypa. Kashypata married thirteen of Daksha's daughters and all the devas and the creatures were born through them.^{[50]:103} Other Puranas and the Manu Smriti mention several variations of this theory.

In Vishnu Purana, the Purusha is same as the creator deity Brahma, and is a part of Vishnu.^{[50]:319} The Shaivite texts mention the Hiranyagarbha as a creation of Shiva.^[46] According to the Devi-Bhagavata Purana Purusha and Prakriti emerged together and formed the Brahman, the supreme universal spirit that is the origin and support of the universe.^{[50]:319}

Brahmanda (cosmic egg)

According to Richard L. Thompson, the *Bhagavata Purana* presents a geocentric model of our Brahmanda (cosmic egg or universe), where our Bhu-mandala disk, equal in diameter to our Brahmanda, has a diameter of 500 million yojanas (trad. 8 miles each), which equals around 4 billion miles or more, a size far too small for the universe of stars and galaxies, but in the right range for our solar system. In addition, the *Bhagavata Purana* and other Puranas speak of a multiplicity of universes, or Brahmandas, each covered by seven-fold layers with an aggregate thickness of over ten million times its diameter (5×10^{15} yojanas \approx 6,804+ light-years in diameter). The Jyotisha Shastras, *Surya Siddhanta*, and *Siddhānta Shiromani* give the Brahmanda an enlarged radius of about 5,000 light years. Finally, the *Mahabharata* refers to stars as large, self-luminous objects that seem small because of their great distance, and that our Sun and Moon cannot be seen if one travels to those distant stars. Thompson notes that Bhu-mandala can be interpreted as a map of the geocentric orbits of the sun and the five planets, Mercury through Saturn, and this map becomes highly accurate if we adjust the length of the yojana to about 8.5 miles.^[71]

Brahma, the first born and secondary creator, during the start of his kalpa, divides the Brahmanda (cosmic egg or universe), first into three, later into fourteen lokas (planes or realms)—sometimes grouped into heavenly, earthly and hellish planes—and creates the first living entities to multiply and fill the universe. Some Puranas describe innumerable universes existing simultaneously with different sizes and Brahmas, each manifesting and unmanifesting at the same time.

Indian philosophy

The Samkhya texts state that there are two distinct fundamental eternal entities: the Purusha and the Prakriti. The Prakriti has three qualities: sattva (purity or preservation), rajas (creation) and tamas (darkness or destruction). When the equilibrium between these qualities is broken, the act of creation starts. Rajas quality leads to creation.^[72]

Advaita Vedanta states that the creation arises from Brahman, but it is illusory and has no reality.^{[50]: 103}

Cycles of creation and destruction

Many Hindu texts mention the cycle of creation and destruction.^{[50]: 104} According to the Upanishads, the universe and the Earth, along with humans and other creatures, undergo repeated cycles of creation and destruction (pralaya). A variety of myths exist regarding the specifics of the process, but in general the Hindu view of the cosmos is as eternal and cyclic. The later puranic view also asserts that the universe is created, destroyed, and re-created in an eternally repetitive series of cycles. In Hindu cosmology, age of earth is about 4,320,000,000 years (one day of Brahma that is 1000 times of sum of 4 yugas in years, the creator or kalpa)^[73] and is then destroyed by fire or water elements. At this point, Brahma rests for one night, just as long as the day. This process, called pralaya (cataclysm), repeats for 100 Brahma years (311 trillion, 40 billion human years) that represents Brahma's lifespan.

Lokas

Deborah Soifer describes the development of the concept of lokas as follows:

The concept of a loka or lokas develops in the Vedic literature. Influenced by the special connotations that a word for space might have for a nomadic people, loka in the Veda did not simply mean place or world, but had a positive valuation: it was a place or position of religious

or psychological interest with a special value of function of its own. Hence, inherent in the 'loka' concept in the earliest literature was a double aspect; that is, coexistent with spatiality was a religious or soteriological meaning, which could exist independent of a spatial notion, an 'immaterial' significance. The most common cosmological conception of lokas in the Veda was that of the trailokya or triple world: **three worlds consisting of earth, atmosphere or sky, and heaven**, making up the universe.

— Deborah A. Soiver^[74]

In the *Brahmanda Purana*, as well as *Bhagavata Purana* (2.5),^[75] fourteen lokas (planes) are described, consist of seven higher (*Vyahrtis*) and seven lower (*Patalas*) lokas.^{[76][77]}

1. Satya-loka (*Brahma-loka*)
2. *Tapa-loka*
3. *Jana-loka*
4. *Mahar-loka*
5. Svar-loka (*Svarga-loka* or *Indra-loka*)
6. *Bhuvar-loka* (Sun/Moon plane)
7. *Bhu-loka* (**Earth plane**)
8. *Atala-loka*
9. *Vitala-loka*
10. *Sutala-loka*
11. *Talatala-loka*
12. *Mahatala-loka*
13. *Rasatala-loka*
14. *Patala-loka*

However, other Puranas give different version of this cosmology and associated myths.^[78]

Multiple universes

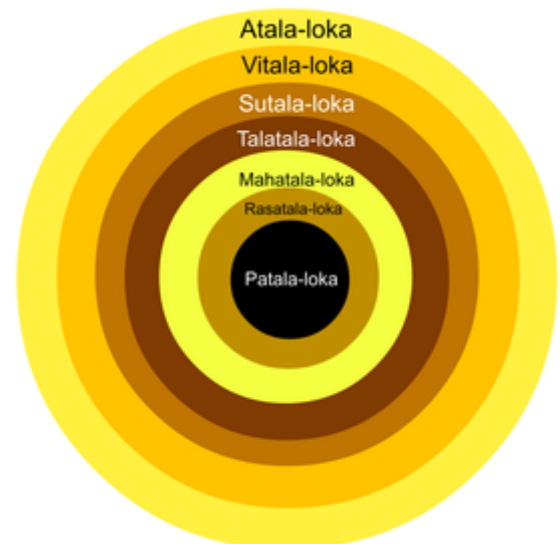
The Hindu texts describe innumerable universes existing all at the same time moving around like atoms, each with its own Brahma, Vishnu, and Shiva.

Every universe is covered by seven layers—earth, water, fire, air, sky, the total energy and false ego—each ten times greater than the previous one. There are **innumerable universes** besides this one, and although they are unlimitedly large, they move about like atoms in You. Therefore You are called unlimited.

— *Bhagavata Purana* 6.16.37^{[79][80]}



Upper seven Lokas in Hindu Cosmology



Lower seven Lokas in Puranas

Because You are unlimited, neither the lords of heaven nor even You Yourself can ever reach the end of Your glories. The **countless universes**, each enveloped in its shell, are compelled by the wheel of time to wander within You, like particles of dust blowing about in the sky. The śrutis, following their method of eliminating everything separate from the Supreme, become successful by revealing You as their final conclusion.

— *Bhagavata Purana* 10.87.41^[81]

The layers or elements covering the **universes** are each ten times thicker than the one before, and all the universes clustered together appear like atoms in a huge combination.

— *Bhagavata Purana* 3.11.41^{[82][83]}

And who will search through the wide infinities of space to count the **universes** side by side, each containing its Brahma, its Vishnu, its Shiva? Who can count the Indras in them all--those Indras side by side, who reign at once in all the **innumerable worlds**; those others who passed away before them; or even the Indras who succeed each other in any given line, ascending to godly kingship, one by one, and, one by one, passing away.

— *Brahma Vaivarta Purana*^[84]

Every thing that is any where, is produced from and subsists in space. It is always all in all things, which are contained as particles in it. Such is the pure vacuous space of the Divine understanding, that like an ocean of light, contains these **innumerable worlds**, which like the countless waves of the sea, are revolving for ever in it.

— *Yoga Vasistha* 3.30.16–17^[85]

There are many other large worlds, rolling through the immense space of vacuum, as the giddy goblins of Yakshas revel about in the dark and dismal deserts and forests, unseen by others.

— *Yoga Vasistha* 3.30.34^[86]

You know one universe. Living entities are born in **many universes**, like mosquitoes in many udumbara (cluster fig) fruits.

— *Garga Samhita* 1.2.28^[87]

See also

- [Brahmapura](#)
- [Hindu calendar](#)
- [Hindu creationism](#)
- [Hindu eschatology](#)
- [Hindu idealism](#)
- [Hindu units of time](#)

- Indian astronomy
- Loka
- Patala
- Puranic chronology
- Urthva lokas
- Vaikuntha

Notes

- a. In Bhagavad Gita Lord Krishna says "Air, water, earth, fire, sky, mind, intelligence and ahankaar (ego) together constitute the nature created by me."
- b. देवानां नु वयं जाना पर वोचाम विपन्यया

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